

CLAIMS

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1. A residual current detection device comprising a plurality of resistive shunts for connection in respective ones of a plurality of lines through which current can flow to and from a load, and respective detector means is provided for each shunt, each of the respective detector means being sensitive to the voltage developed across the shunt for providing a signal indicative of the current flowing through the shunt, whereby any imbalance between the currents flowing through the shunts can be detected.
 2. A device as claimed in Claim 1, in which the detector means comprises an analog to digital converter for each shunt and a processor for receiving the digital signals from the converters and determining whether a current imbalance exists.
 3. A device as claimed in Claim 1 or Claim 2, in which each shunt takes the form of a composite strip having conductive portions at its ends and a resist portion interconnecting the conductive portions.
 4. A device as claimed in Claim 2 or Claim 3, in which the analog to digital converter for each shunt includes a delta-sigma modulator which produces a high frequency signal digital data stream which is converted by decimation filtering into a multi-bit digital data stream at a lower frequency.

5. A device as claimed in Claim 2, 3 or 4, in which each converter is in the form of an integrated circuit mounted on a corresponding one of the resistive shunts.
6. A device as claimed in Claim 5, in which each integrated circuit has analog input terminals connected by lead wires to the two copper end portions of the corresponding one of the resistive shunts.
7. A device as claimed in Claim 6, in which the integrated circuit also has a terminal connected to a voltage reference source and includes a second converter for providing a digital signal stream dependent on the voltage on one of the copper end portions of the associated one of the shunts.

